[NOTE.—Our correspondent does well to point out the desirableness of reducing the heavy charge which necessarily arises under the mode of assurance usually adopted in cases such as those to which his letter refers. The effecting an assurance at once, for the probable amount of advances to be made, presses with great severity on persons having to raise money on these contingent securities. But the remedy does not altogether depend, as Mr. Meikle seems to think, upon the removal of any difficulty which may be found to attend the calculation of the increasing assurance: it has to do rather with the unwillingness of Assurance Companies to bind themselves to undertake an increasing risk, with or without limit, on a life, it may be, deteriorating as the amount at risk increases. The objection on the part of the Companies to enter into an engagement of this kind will be found to be very strong and very general; and they have, no doubt, reason on their side. It seems to us, nevertheless, that, under certain restrictions, our correspondent's suggestion might be sometimes acted upon, and he has certainly done good service in drawing attention to the matter. In his remarks on Mr. Chisholm's work we very cordially concur, and hope to take an early opportunity of dwelling more at large upon its merits.—ED. *A. M.*]

FORMULA FOR AN APPROXIMATE VALUE OF ANNUITIES AT SIMPLE INTEREST.

To the Editor of the Assurance Magazine.

SIR,—I beg to submit the following series for finding the present value of an annuity at simple interest. It is

$$\frac{\log_e(1+nr)}{r} + \frac{1}{2}\left(1+\frac{1}{1+nr}\right) + \frac{r}{12}\left(1-\frac{1}{\overline{1+nr}^2}\right) - \frac{r^3}{120}\left(1-\frac{1}{\overline{1+nr}^4}\right)+\ldots -1.$$

It is obtained by applying a well known formula of the differential calculus (*De Morgan's Differential Calculus*, p. 311) to the summation of $\frac{1}{1+r}+\frac{1}{1+2r}+\ldots\frac{1}{1+nr}$, and taking the limits from o to n.

Upon reference, I find that a similar, although not so convenient an approximation, has been given in Vol. V., page 256, of the *Assurance Magazine*. By a misprint, the modulus of the Napierian logarithms has been put down in it as 2·3205851, instead of 2·3025851.

I am, Sir,

Your obedient servant,

MARCUS N. ADLER.

4, *Crosby Square*,
12*th March*, 1858.